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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/294,341	04/20/1999	MASAAKI HIROKI	0756-1964	6027
31780	7590	11/14/2006	EXAMINER	
ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165			LIANG, REGINA	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/294,341	<b>Applicant(s)</b> HIROKI, MASA AKI	
	<b>Examiner</b> Regina Liang	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10,12-14,16,17,19-21,23,25-33,35 and 37-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,10,12-14,16,17,19-21,23,25-33,35 and 37-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This Office Action is responsive to amendment filed 9/29/06. Claims 1, 3-8, 10, 12-14, 16, 17, 19-21, 23, 25-33, 35, 37-44 are pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC 103***

3. Claims 1, 3-6, 8, 10, 12, 14, 16, 17, 19, 21, 23, 25, 27-31, 33, 35, 37, 39-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Misawa et al (US. PAT. NO. 5,811,837 hereinafter Miasawa) in view of Nakano et al (US. 6,229,513 hereinafter Nakano) and Prak (US. PAT. NO. 4,645,947).

As to claim 1, Fig. 1 of Miasawa discloses a display device comprising a display panel having a TFT (29), a scanning line driving circuit (a gate line driver circuit 21), a signal line driving circuit (a source line driver circuit 12), the signal line driving circuit comprising a plurality of shift registers (a shift register 13 having a plurality of unit cells 210-213). Fig. 11 of Miasawa also disclose a pair of dual clocks signal for driving the shift register having a first clock signal CL (first signal) and a reversed clock signal CL (second signal) having a different phase from the first clock signal (first signal), and both the clock signal and the reversed clock signal (first signal and second signal) are transmitted to each of the shift register unit cells. Miasawa teaches noise due to the first and second signals is reduced by the phase difference (col. 12, lines 31-34).

Miasawa does not explicitly disclose the display device having a control circuit for generating the clock signal and a video signal processing circuit. However, Fig. 1 of Nakano teaches a display device having a control circuit (110) connected to a signal line driving circuit for generating display control signals including a clock signal, display data, etc. and transmitting the display control signals to the signal line driving circuit, and a video signal processing circuit (100) connected to the control circuit (110) and the signal line driving circuit (130) for processing a video signal from an external device (180). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display device of Miasawa to have the control circuit and the video signal processing circuit as taught by Nakano so as to provide control for the display device and to enhance the resolution of a display panel.

Miasawa as modified by Nakano differs from the claim in that the control circuit does not have a delay circuit for producing the phase difference in the second signal (reversed clock signal) with respect to the phase of the first signal (first clock signal). However, Fig. 1 of Prak teaches a control circuit (clock driver circuit) have a delay circuit (12, 13) for producing the phase difference in the second signal with respect to the phase of the first signal (see Fig. 5). Thus, in order to make and use Miasawa's device with two different phase clock signals, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control circuit of Miasawa as modified by Nakano to have a delay circuit as taught by Prak since this results in a minimum of skew between a true signal and its complement and results in improved and efficient operation (col. 1, lines 32-36 of Prak).

As to claim 3, Miasawa teaches the first signal and the second signal are clock signals.

As to claims 4, Fig. 11B of Miasawa shows that the first clock signal (CL) has a different rise time period and a different fall time period from the second clock signal (reversed CL).

As to claims 5, Fig. 11B of Miasawa also teaches that a signal rise time period or a signal fall time period of the first or second signal is shorter than a half of a signal holding time period of the first or second signal.

As to claim 6, Fig. 11B of Miasawa shows that the phase difference in the second signal produces a phase difference corresponding to a signal rise time period of the first signal.

As to claims 8, 14, note the discussion of claim 1 above. In addition, Nakano teaches each of the first signal and the second signal is a clock signal. Fig. 11B of Miasawa shows a signal rise time period or a signal fall time period of the first or second signal is shorter than a half of a signal holding time period of the first or second signal.

As to claims 10, 17, Fig. 11B of Miasawa shows that the first clock signal (CL) has a different rise time period and a different signal fall time period from the second clock signal (reversed CL).

As to claims 12, 19, Fig. 11B of Miasawa teaches that a signal rise time period or a signal fall time period of the first or second signal is shorter than a half of a signal holding time period of the first or second signal

As to claim 16, Nakano teaches the first signal and the second signal are clock signals.

As to claim 21, note the discussion of claim 8 above. In addition, Nakano teaches the register latches display data (col. 10, line 5), and Miasawa discloses the first clock signal CL (first signal) and the second clock signal (reversed CL) are input to a same shift register (latch) as claimed

As to claim 23, Fig. 11B of Miasawa shows that the first clock signal (CL) has a different rise time period and a different signal fall time period from the second clock signal (reversed CL).

As to claim 25, Fig. 11B of Miasawa shows that the phase difference in the second signal produces a phase difference corresponding to a signal rise time period of the first signal.

Claims 27 and 33, which are method claims corresponding to the above apparatus claims 1 and 8 are rejected for the same reasons as stated above since such method "steps" are clearly read on by the corresponding "means".

As to claims 28, Miasawa teaches the first signal and the second signal are clock signals.

As to claims 29 and 35, Fig. 11B of Miasawa shows that the first clock signal (CL) has a different rise time period and a different signal fall time period from the second clock signal (reversed CL).

As to claim 30 and 37, Fig. 11B of Miasawa teaches that a signal rise time period or a signal fall time period of the first or second signal is shorter than a half of a signal holding time period of the first or second signal

As to claims 31, Fig. 11B of Miasawa shows that the phase difference in the second signal produces a phase difference corresponding to a signal rise time period of the first signal.

As to claims 39-44, Fig. 5 of Prak shows a length of the phase difference is at least a signal rise time period of the first signal or a signal fall time period of the first signal, and shorter than a half of a signal holding time period.

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4. Claims 7, 13, 20, 26, 32, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miasawa, Nakano and Prak as applied to claims 1, 8, 14, 21, 27 and 33 above, and further in view of Shimada (US. PAT. NO. 5,801,673 hereinafter Shimada).

Miasawa as modified by Nakano and Prak teaches the display device including a transmission type LCD panel. Miasawa as modified by Nakano and Prak does not disclose the display device is a projection type display device. However, Fig. 2 of Shimada teaches a LCD display device is a projection type display device having a light source (202) for projection. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display device of Miasawa as modified by Nakano and Prak to be a projection type display device as taught by Shimada since it would have been obvious substitution of one type of LCD display device for another to provide a large image.

#### ***Response to Arguments***

5. Applicant's arguments filed 9/26/06 have been fully considered but they are not persuasive.

Applicant's remarks on page 4 regarding the combination of Misawa, Nakano and Prak are not persuasive. Applicant's remarks that "Misawa does not teach or suggest that noise due to first and second signals is reduced by phase difference" are not persuasive. Misawa Figs. 11A & 11B clearly teaches the two signals are different in phase (see Fig. 11B) and on col. 12, lines 31-34 clearly teaches that noise is sharply reduced. Therefore, Misawa clearly teaches that noise due to first and second signals is reduced by phase difference

Applicant's remark that Prak teaches away is not persuasive since Prak does not explicitly disclosed a delay circuit can not be used in Misawa. As stated above, Misawa clearly teaches the signals are difference in phase, i.e. a phase difference; and as set forth in the Office action, although Misawa teaches the signals have a phase difference, the Misawa's reference is silent as to a delay circuit for producing the phase different signals. Prak is relied upon to show that the use of delay circuit for generating signals having phase difference is old and well known in the art. Thus, to modify Misawa to comprise a delay circuit for providing signals having a phase difference in order to make and use Misawa's invention would have been obvious as set forth in the Office rejection, and a motivation was also given in the Office action.

Applicant's remarks regarding Nakano are not persuasive. Misawa discloses a display device but does not explicitly disclose a control circuit for generating the clock signal and a video signal processing circuit. However, in order for a display device to function, a control circuit for generating the clock signal and a video signal processing circuit for processing video signal is needed as is well known in the art, such as evidenced by Nakano. Therefore, it would have been obvious to modify Misawa to comprise a control circuit for generating the clock signal and a video signal processing circuit for processing video signal as disclosed by Nakano in order to make and use the display device of Misawa.

Therefore, the prior art of record, as set forth in the rejections does expressly suggest the claimed invention and the Office has presented a clearly convincing line of reasoning as to why the claimed invention is obvious in light of the teachings of the references.

The above remarks are also applicable to the combination of Misawa, Nakano, Prak and Shimada and are incorporated by reference herein as the Office has show that it is obvious to



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combine Misawa, Nakano, Prak. Applicant should take note that Shimada is relied upon for the teaching of a projection type display device and that it would have been obvious to modify the combination of Misawa, Nakano, Prak to comprise a projection type device as set forth in the Office action, while the other limitations are rendered obvious over the combination of Misawa, Nakano, Prak.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

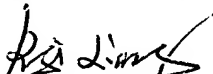
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (571) 272-7693. The examiner can normally be reached on Monday-Friday from 8AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Regina Liang  
Primary Examiner  
Art Unit 2674

11/1/06